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PATENT
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Applicant: Powell et al. : Confirmation No. 9296
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Serial No.: 09/963,720 : Art Unit: 2833
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Filed: September 26, 2001 : Examiner: Leon, Edwin A.
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For: ULTRASONIC WELDED :
CONNECTOR STICK :

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Robert J. Kapalka

APPEAL BRIEF

This brief is in furtherance of the Notice of Appeal filed in this case on February 21, 2008.

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Real Party in Interest

The real party in interest is Tyco Electronics Corporation, 2901 Fulling Mill Road, Middletown, Pennsylvania, 17057, which is the owner of this application by assignment recorded in the U.S. Patent and Trademark Office at Reel 012276, Frame 0676.

Related Appeals and Interferences

There are no related appeals or interferences.

Status of the Claims

Claims 1-14, 16, 17, 25, 27-29, 35 and 40 have been canceled.

Claims 15, 18-24, 26, 30-34, 36-39, 41 and 42 remain in the application, stand rejected, and are on appeal.

Status of Amendments

There are no amendments after final rejection.

Summary of Claimed Subject Matter

The invention defined in independent claims 15, 26, 34 and 42 is variously termed in the preamble of each claim as a connector device, a connector stick device, a connector assembly, and a stick of electrical connectors. Regardless of the particular terminology, the invention is shown generally in Fig. 8 as a connector stick 348 comprising multiple electrical connectors 310 (specification at page 6, lines 24-26). Various embodiments of the connectors 310 are shown in Figs. 1-7 as connectors 10, 100 and 200. With reference to both the connector 100 shown in Figs. 4-5 and the connector 200 shown in Figs. 6-7, each of the connectors 100, 200 includes a housing 112, 212 having opposing sides 122, 124; 222, 224 (specification at page 5, lines 14-18 and page 6, lines 5-10). A conductive connecting device 142, 242 is mounted in the housing (specification at page 5, line 27 to page 6, line 4, and page 6, lines 17-23). Each connector has at least one opening 128A, 128B, 228 through which an electrical cable can extend and be connected with the conductive connecting device (specification at page 5, lines 18-26 and page 6, lines 10-26). Referring back to Fig. 8, at least one of the opposing sides of each connector 310

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is removably connected to one of the opposing sides of an adjacent connector 310 by an ultrasonic weld 350 (specification at page 6, lines 26-28), whereby each one of the connectors is separable from its adjacent connectors by breaking the ultrasonic welds to form an individual connector unit (specification at page 7, lines 8-12).

The invention defined in independent claims 39 and 41 is a method for splicing cable to a plurality of connectors. The method comprises steps of providing a plurality of individual connectors each including a housing 12, 112, 212, a cable opening 28, 128A, 128B, 228 in the housing, and a conductive crimping device 140, 240 in the housing; bonding the connectors to one another with respective ultrasonic welds 350 to form a connector stick 348, inserting cable into the cable opening of each joined connector, securing the cable to each of the connectors using the conductive crimping device, and breaking the respective ultrasonic welds to form a plurality of individual connector units each having a cable spliced thereto (specification at page 5, line 3 to page 7, line 12).

Grounds of Rejection to be Reviewed on Appeal

Applicants request the Board to review the rejection of claims 15, 18-24, 26, 30-34, 36-39, 41 and 42 under 35 U.S.C. 103(a) as being unpatentable over Denovich et al. (US 6,254,421) in view of Scholl, Jr. (US 4,886,497).

Argument

Claims 15, 18-24, 26, 30-34, 36-39, 41 and 42 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Denovich et al. (US 6,254,421) in view of Scholl, Jr. (US 4,886,497).

The claims relate to a connector stick device comprising a plurality of electrical connectors, and to a method for splicing cable to a plurality of electrical connectors. All of the claims include limitations wherein adjacent connectors are joined to each other by respective ultrasonic welds, and wherein the joined connectors are separable from each other by breaking the ultrasonic welds.

Denovich et al. discloses individual connectors (10, 110) each comprising a housing (12, 112) having opposing sides and a conductive connecting device (24, 124) mounted in the housing. With reference to Figure 10, Denovich et al. discloses two connectors (110) positioned

side-by-side in abutting relationship. See the description at column 2, lines 9-10 and column 3, lines 46-51.

The Examiner takes the position that Denovich et al. discloses that the housings in Fig. 10 are "connected" to each. Applicant respectfully disagrees. The ordinary meaning of "connected" includes the idea of a physical link which resists separation. *Webster's Ninth New Collegiate Dictionary* defines "connected" as "joined or linked together". This is more than merely touching. Denovich et al. discloses only that the housings are "in abutting relationship". Just like books that are side-by-side on a bookshelf, the Denovich et al. housings are physically touching each other, but they are not connected, joined, or linked together. Denovich et al. does not disclose or suggest that the housings are connected in any way.

The Examiner points to Scholl, Jr., for disclosing the use of ultrasonic weld to join parts of an assembly, and the Examiner concludes that it would have been obvious to one having ordinary skill in the art to modify the connector of Denovich et al. by using ultrasonic weld as taught in Scholl, Jr., in order to provide the connector with a breakable weld that provides an audible and tactile indication that the assembly has not been used. Applicant respectfully disagrees.

First, the Examiner's reliance on Scholl, Jr. is misplaced as being directed to non-analogous art. "In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." M.P.E.P. §2141.01(a) citing *In re Oetiker*, 977 F.2d 1443, 1446 (Fed. Cir. 1992). "A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem." M.P.E.P. §2141.01(a) citing *In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992).

Scholl, Jr., relates to a disposable protective container for hypodermic syringes. Scholl, Jr., is in no way concerned with electrical connectors, and therefore it is not in the field of applicant's endeavor.

Further, Scholl, Jr., is not reasonably pertinent to the particular problem with which the applicant was concerned. As stated in applicant's disclosure at page 2, lines 16-18, applicant

was concerned with providing connectors that are joined in a removable or breakable manner. Scholl, Jr., is concerned with providing a reusable tamper resistant package. In this regard, Scholl, Jr., discloses a protective container comprising a hollow plastic cylinder (11) that holds a hypodermic syringe, and a cap (26) that is fastened to the cylinder such as by ultrasonic welding. To gain access to the hypodermic syringe, the cap is twisted relative to the cylinder to break the welds. Scholl, Jr., states that the reason for using a weld is that breaking the weld produces an audible and tactile indication that the container has not previously been opened and that the hypodermic syringe has not previously been used or tampered with (description at column 5, lines 5-16).

The Examiner applies this motivation to the connector of Denovich et al. and states that it would have been obvious to modify the connector of Denovich et al. by using ultrasonic weld as taught in Scholl, Jr., in order to provide the connector with a breakable weld that provides an audible and tactile indication that the assembly has not been used. However, there is no need to provide an audible and tactile indication that the connector assembly has not been used. In contrast to a hypodermic syringe, previous use of the connector assembly is not a concern. While a hypodermic syringe is subject to contamination and limited to a single use, a connector assembly can be safely used many times.

The problem that was of concern to the present inventors was how to provide a convenient, efficient and cost-effective assembly of connectors that could be used in a crimping tool. The inventors solved this problem by joining individual connectors together with breakable welds. The joined connectors form an assembly that is easily installed in the crimping tool, thereby reducing the number of individual parts that are handled and simplifying the process of feeding connectors into the tool. The welds are easily broken to form individual connector units after the connectors are processed in the tool.

Scholl, Jr., is not pertinent to these concerns, and does not provide any motivation or suggestion which would lead a person of ordinary skill in the art to combine the references as proposed by the Examiner.

For these reasons, applicants submit that the invention defined in the pending claims is not known or made obvious by the cited prior art.

The Board is respectfully requested to reverse the rejection of the claims and to indicate allowability thereof.

Respectfully submitted,

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Claims Appendix

1-14. (Canceled).

15. A connector device comprising:

a first connector including a housing having opposing sides and a conductive connecting device mounted in the housing; and

a second connector including a housing having opposing sides and a conductive connecting device mounted in the housing;

at least one of said opposing sides of said first connector being removably connected to one of said opposing sides of said second connector by an ultrasonic weld, whereby said first connector is separable from said second connector by breaking said ultrasonic weld such that said first connector forms an individual connector unit.

16-17. (Canceled)

18. The connector device of Claim 15, wherein said housings are formed of a nonconductive material.

19. The connector device of Claim 18, wherein said housings are formed of a polycarbonate material.

20. The connector device of Claim 18, wherein said housings are formed of a polyester material.

21. The connector device of Claim 15, wherein said housings are formed of a polypropylene material.

22. The connector device of Claim 15, where said first connector housing is formed of one nonconductive material and said second connector housing is formed of a second nonconductive material.

23. The connector device of Claim 15, wherein said conductive connecting device in each of said housings is a crimping device adjacent to a channel defined in each of said housings.

24. The connector device of Claim 23, wherein said first and second connectors further include a crimping portion capable of engaging said crimping device.

25. (Canceled)

26. A connector stick device comprising:
a plurality of connectors;
each of said connectors including a conductive connecting device mounted in a housing having opposing sides; and

wherein at least one of said opposing sides of each said connector is removably connected to one of said opposing sides of an adjacent said connector by an ultrasonic weld, and further wherein each said connector is separable from its adjacent said connector by breaking said ultrasonic weld to form an individual connector unit.

27-29. (Canceled)

30. A connector stick device in accordance with claim 26 wherein said housings comprise first and second portions movable relative to one another.

31. A connector stick device in accordance with claim 26 wherein each said conductive connecting device comprises a crimping device.

32. A connector stick device in accordance with claim 26 wherein said housings each comprise a channel for receiving cabling, and a crimping device proximate said channel.

33. A connector stick device in accordance with claim 26 wherein said opposing sides are nonconductive.

34. A connector assembly for splicing cable with an automatic crimping tool; said connector assembly comprising:

a plurality of nonconductive housings joined to one another by respective ultrasonic welds to form a connector stick, each of said housings holding a conductive connecting device

and having at least one opening for passage of electrical cabling to the conductive connecting device, wherein said plurality of joined nonconductive housings are separable from one another by breaking said respective ultrasonic welds as the cable is spliced to successive said conductive connecting devices along the connector stick, thereby forming a plurality of individual connector units.

35. (Canceled)

36. A connector stick assembly in accordance with claim 34 wherein said housings comprise first and second portions movable relative to one another.

37. A connector stick assembly in accordance with claim 36 wherein each said conductive connecting device comprises a crimping device.

38. A connector stick assembly in accordance with claim 34 wherein said housings each comprise a channel for receiving cabling, and a crimping device proximate said channel.

39. A method for splicing cable to a plurality of connectors, said method comprising:
providing a plurality of individual connectors, each said connector including a housing, at least one cable opening, and at least one conductive crimping device proximate the opening;
joining the connectors to one another by respective ultrasonic welds to form a connector stick for splicing operations;
inserting cable into the openings of each of the joined connectors; and

securing the cable to each of the connectors using the conductive crimping device, wherein force generated in securing the cable to the respective connectors separates the respective connectors from the connector stick by breaking the respective ultrasonic welds, thereby forming a plurality of individual connector units each having cable spliced thereto.

40. (Canceled)

41. A method for splicing cable to a plurality of connectors, said method comprising: providing a plurality of individual connectors, each said connector including a first housing portion and a second housing portion movable relative to one another, a cable opening in one of the first and second housing portions, and a conductive crimping device in the other of the first and second housing portions;

bonding the connectors to one another with respective ultrasonic welds to form a connector stick for splicing operations;

inserting cable into an opening of one of the joined connectors; and

breaking the ultrasonic weld between the one connector and an adjacent connector while securing the cable to the one connector using the conductive crimping device.

42. A stick of electrical connectors comprising:

a plurality of electrical connectors disposed side-by-side, each of said connectors including a conductive connecting device mounted in a non-conductive housing, said connectors being joined together by respective ultrasonic welds between adjacent said housings, wherein

said connectors are individually separable from the stick by breaking said ultrasonic welds to form individual connector units.

Evidence Appendix

None

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Related Proceedings Appendix

None

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